



Sustainable Schools Improve Learning and the Environment

The recent *National Action Plan for Greening America's Schools* concludes that a sustainable school creates a healthy environment that is conducive to learning and saves energy, resources, and money. Additional benefits of sustainable schools include improved student health, attendance, and academic achievement.¹

Here are a few more reasons to consider sustainable features:

- A 2006 study showed that sustainable schools use 33 percent less energy and 32 percent less water than conventionally constructed schools, significantly reducing utility costs over the average 42-year life cycle of a school.²
- Additional studies show the continuing high cost of energy and utilities. According to national data from 2008, the median annual cost for energy and utilities per student in kindergarten through grade twelve was \$295.13.³
- Improving a school's health and safety standards can lead to a 36-point increase in California Academic Performance Index scores.⁴
- Because green schools emphasize a healthy indoor environment, a district that builds green schools will benefit from reduced exposure to liability for students' and staff's health-related problems, fewer lawsuits, and less risk of damage to its reputation.⁵
- A school site that uses effective construction techniques can reduce, reuse, and recycle between 50 percent and 75 percent of building materials (e.g., brick, asphalt, wood, plastic, glass, gypsum



board, and carpet), thereby reducing environmental impacts.⁶

- Attention to school siting practices can improve solar access; take advantage of natural air flows; maximize daylighting; and increase easy and safe pedestrian, bicycle, and mass transit options.^{7, 8}
- Substandard physical environments are strongly associated with truancy and other behavior problems in students. Lower student attendance led to lower scores on standardized tests in English–language arts and math and to less funding.^{9, 10}
- Studies indicate that student performance is improved by an even distribution of daylight, an expansive view, and limited glare and thermal heat gain. One study found 20 percent faster student progress on math and 26 percent faster progress in reading compared with students in classrooms with less exposure to daylight.^{11, 12}

Notes

1. Brooks Rainwater and Jason Hartke, *A National Action Plan for Greening America's Schools: Local Leaders in Sustainability, Special Report from Sundance* (Washington, DC: U.S. Green Building Council, 2010).
2. Gregory Kats, *Greening America's Schools: Costs and Benefits* (n.p.: Capital E, 2006).
3. Joe Agron, "38th Annual Maintenance & Operations Cost Study," *American School & University* 81, no. 9 (2009): 20–23.
4. Jack Buckley, Mark Schneider, and Yi Shang, *Los Angeles Unified School District School Facilities and Academic Performance* (Washington, DC: National Clearinghouse for Educational Facilities, 2004).
5. Collaborative for High Performance Schools, *Best Practices Manual, Volume I: Planning* (San Francisco, 2006).
6. U.S. Environmental Protection Agency, *Travel and Environmental Implications of School Siting* (Washington, DC, 2003).

7. See note 5.
8. See note 6.
9. Valkiria Durán-Narucki, "School Building Condition, School Attendance, and Academic Achievement in New York City Public Schools: A Mediation Model," *Journal of Environmental Psychology*, no. 3 (2008): 278–86.
10. Revathy Kumar, Patrick M. O'Malley, and Lloyd D. Johnston, "Association between Physical Environment of Secondary Schools and Student Problem Behavior," *Environment and Behavior* 40, no. 4 (2008): 455–86.
11. Peter Boyce, *Reviews of Technical Reports on Daylight and Productivity* (Troy, NY: Rensselaer Polytechnic Institute, 2004).
12. Heschong Mahone Group, *Daylighting in Schools: An Investigation into the Relationship Between Daylighting and Human Performance* (Fair Oaks, CA, 1999).